

VINAYAK SHARMA

SENIOR FULL-STACK PRODUCT ENGINEER

vinayak@thesharma.me | +91 99627 44519 | India · Remote | vinayak.thesharma.me

SUMMARY

Full-stack product engineer, **6+ years**, working at the awkward edge of hardware, domain and software. Sole architect of a **four-product instrument-software suite** running hardness testers and metallurgical microscopes in production labs; engineering lead for an **eight-product workplace-safety platform** on German industrial sites. Computer vision and embedded Linux on one side, multi-tenant GraphQL and offline-first field clients on the other.

TECHNICAL SKILLS

PROGRAMMING	Dart, JavaScript / TypeScript, Python, Go, C#, SQL
CLIENT	Flutter (macOS, Windows, Linux, Android, iOS, Web), BLoC, custom-painter canvases, offline-first sync
VISION & DATA	OpenCV, pure-Dart image pipelines, ASTM / ISO metrology methods, ML Kit, TensorFlow
PLATFORM	Node.js, GraphQL, Prisma, MongoDB, gRPC & protobuf, Appwrite, Firebase, multi-tenant & signed-document design
SYSTEMS	Embedded Linux (Wayland, Raspberry Pi, GPIO), Docker, Kubernetes, CI/CD, Git, OTA & licensing

EXPERIENCE

Lead Developer — Oz SoftTech Private Limited

JAN 2024 – PRESENT

Remote · Instrument & measurement software (Multitek), consumer products

- Sole architect and engineer of the **Multitek suite** — four Flutter products across desktop and embedded Linux, operating hardness testers and metallurgical microscopes in production labs behind one calibration model, report format and operator interface.
- Hardness Works** — owns turret, load and dwell on a Vickers/Brinell tester, detects indentation diagonals off the live camera (OpenCV) with manual override for low-contrast etches, derives HV/HBW and ASTM E140 conversion, and rolls trend, distribution and case-depth charts into a templated certificate.
- Image Works** — implemented **10 ASTM/ISO methods** (E112 grain size, ISO 4967 inclusion rating, E1245 phase fraction, A247 nodularity, E1077 decarburization) down to the annex rules as pure-Dart pipelines with no widget imports, each result shipping the overlay that produced it.
- Image Lite** — a 20-mode measurement canvas with per-objective $\mu\text{m}/\text{pixel}$ calibration so nothing is reported in pixels, and queued stitching / focus-stacking as external processes that never block acquisition.
- Hardness Works Core** — the same tester on **embedded Linux**: a Raspberry Pi touch panel booting straight into a Wayland kiosk, GPIO over *dart_periphery*, and a supervised firmware bridge that self-restarts so a fault never strands the operator.
- Built the shared platform — an in-house camera plugin putting full-resolution industrial USB/GigE feeds into **zero-copy GPU textures**, plus gRPC licensing with per-app identity, TOTP exchange, clock-tamper defence and OTA updates.
- Built Intrisafe's **gatehouse induction kiosk** — an unattended Surface-tablet terminal in **26 languages**, no login, issuing **signed certificates** a Node service verifies against a public key; induction video range-streams in 1 MB chunks from a disk cache, analytics read those same certificate records, and OTA deployment covers **25+ devices**.
- Lead **Limse**, a hyperlocal social-commerce app on Android, iOS and web from one Flutter codebase — offline-first caching, in-app video editing and Google ML Kit for on-device content understanding.

Lead Software Engineer — Intrisafe GmbH

JUN 2021 – DEC 2023

Remote · Hamburg, Germany · Workplace-safety platform

- Led engineering for a Hamburg workplace-safety SaaS whose platform spans **eight products** — covering a worker's whole path onto a German industrial site, from gatehouse induction to the safety-office console — leading a **team of 3 engineers**.
- Designed the **single data model** behind all of it — employees, sites, work equipment, qualifications, instructions, incidents — over **GraphQL / Prisma / MongoDB** with subscriptions, so a worker is one identity whether the fact was entered at a terminal, on a phone at a scaffold, or in the office.
- Intrisafe App** — the safety-office console: a qualification lifecycle (active / expiring / expired) that generates the task queue instead of somebody remembering, plus templated inspections capturing defects, photo evidence and an on-device signature, exported to PDF.
- Intrisafe Learning** — courses raised by a gap in the qualification register rather than browsed from a catalogue, mixing video, narration and handouts in one player, then a timed test whose pass writes a certificate back to the qualification that raised it.
- Companion** — the field mobile client for inspections, defect closeout, equipment registers and incidents, holding drafts on-device and syncing on reconnect: a scaffold inspection in a basement is exactly where signal is not.
- Admin & Backend** — a multi-tenant control plane over company, user and role records, one deployment serving every customer their own branded instance, on Docker and Kubernetes with CI/CD collapsing a manual release into one automated deploy.

Freelance Full-Stack Engineer — Independent

APR 2020 – JAN 2023

Remote · 13 client projects

- Delivered **13 full-stack projects** across industries and regions — Flutter, Firebase, Node.js, GraphQL, .NET, Unity, TensorFlow, Python — shipping to embedded, desktop, mobile and web, each owned from scoping to handover.

EDUCATION

B.Tech, Electronics & Instrumentation — Vellore Institute of Technology, Vellore

2019 – 2023

LANGUAGES English (Fluent) | Hindi (Native) | Tamil (Basic) | German (Elementary)